GLOBEPROGRAM®

GLOBE Project Proposal Planning Guide

Outcome: Participants will be prepared to submit their GLOBE research proposal to the GLOBE Virtual Science Symposium (VSS).

Timeline for the VSS

This guide provides a backwards planning guide from the VSS deadline for a suggested timeline for completing a GLOBE research project proposal. **The deadline for submitting VSS research projects and project proposals is 30 January 2026.**

- Review the theme, timeline, and details on the VSS webpage.
- Find resources and support on facilitating GLOBE research and the science practices.

VSS Project Requirements

Due to the abbreviated timeline, research teams may submit a full research project or a research project proposal. **A presentation is required, but a written report is optional**. See the VSS Project Requirements for more information.

- Research teams in the early stages of developing a research project may submit a presentation that outlines their project proposal, including proposed research question(s), study site description, and data collection plan. This is a great way to get feedback on the early stages of a research project! View the GLOBE VSS Research Proposal Template for a suggestion of items to include.

Suggested Timeline for Developing a Research Proposal:

☐ **6 weeks prior to VSS deadline (December):**
- Student groups assigned
- Research question developed by/assigned to student groups

☐ **5 weeks prior to VSS deadline (December):** *The Research Question and Revision of Research Question*
- Three types of Research Questions:
  - **Descriptive.** When a study is designed primarily to describe what is going on or what exists.

    ▪ Describing the characteristics of a variable or phenomenon.

    ▪ Public opinion polls compared to GLOBE data can be used to describe something.
  - **Relational.** When a study is designed to look at the relationships between two or more variables.
    - How does ___and ___compare?
  - **Causal.** When a study is designed to determine whether one or more variables causes or affects one or more outcome variables.
    - What affect does ___have on _?
- Write a one sentence HYPOTHESIS that answers your question.

☐ **2-4 weeks prior to VSS (December/January):** *Identify Study Site and Develop Data Collection Plan*
- Determine equipment need to perform field work (see GLOBE protocols and GLOBE equipment information)

- Design data collection plan:
  - o Determine frequency of data collection.
  - o Decide where data will be collected.
  - o Identify who will collect data.
  - o Identify who will enter data into the GLOBE database.
- Data Collection from:
  - o Field work from data collection plan
  - o <u>GLOBE Visualization Tool</u>
  - o NASA Satellite data/images (e.g., My NASA Data's <u>Earth System Data Explorer)</u>
- Identify and Download Datasets from the <u>GLOBE Database</u>:
  - o Determine which datasets you will use from your study site or from other schools/organizations (see <u>GLOBE Visualization System</u> or <u>Advanced Data Access Tool (ADAT)</u>)
  - o Download data from the GLOBE database (see <u>GLOBE Vis tutorials</u> or <u>ADAT tutorial</u>)

□ **1-2 weeks prior to VSS (January):** *Prepare Presentation*
  Step 1: Write Introduction
- Obtain a <u>GLOBE poster template</u> or create a free <u>ArcGIS StoryMaps</u> account (see the <u>StoryMap Quickstart Guide</u> for help)
- Write about the following:

  - o Describe the problem you are trying to solve.
  - o State of the <u>science</u> of your topic(s).
  - o Why is this research important to your group?
  - o What do you hope to learn?
  - o What is the community impact/connection of your research?

*Step 2***:** *Write About Your Data Collection Plan and Study Site*
- Write about the following:
  - o Describe your study areas: (site, school, community)
  - o Describe GLOBE protocols and/or data from the GLOBE database you plan to use. Will you collect your own data or use existing data from the GLOBE database?
  - o Describe when you plan to collect data and who will collect the data.
  - o Describe the equipment and tools needed to collect data.
- Include a picture of your study area (e.g., from Google Earth)
- Include an image or two of students collecting data

Step 3: Write an Abstract/Summary (1 paragraph)
- Write down what you plan to do in your research project.
- Write down why your research project is important.
- Write down what you hope to learn from your research.

Step 4: Write Bibliography
- State the books/articles/websites you used in this project.

Tips for *Preparing a Presentation*
- Review the <u>required elements</u> for a VSS project and <u>project review information</u>

- Decide on presentation format: StoryMap, Poster, Video, or another platform
- Prepare Presentation

Next Steps: Collect Data, Analyze Results, Discuss Results and Develop a Conclusion

After the VSS you can incorporate feedback from STEM reviewers into your data collection plan and begin to collect data, analyze results, and write your research report or incorporate the additional information into your research presentation. The steps below provide guidance on further developing your research project.

☐ *Analyze Results*
- Create a table of your results:
    - Make sure your table has a <u>title</u> and is <u>numbered.</u>
    - Make sure each column and row in your table is clearly labeled.
- Create a visualization of your results- graph(s):
    - Make sure your graph has a <u>title</u> and is <u>numbered</u>.
    - Make sure you have a legend (description of the information) in your graph.

☐ *Discussion of the Results*
- Summarize (in words) your results by referring to your tables(s) and graphs(s).
- Write about possible sources of error with your data:
    - What errors in your data might there be?
    - Do your results compare with someone else's research? (You will have to look online to see if anyone else has done the same kind of research as you just completed.)

☐ *Conclusion*
- Discuss whether the results support your hypothesis:
    - Discuss why or why not your hypothesis was correct.
- Write about how you reached your conclusion.
- Restate why it is important to know the results of your research.
- What follow-up actions would you like to take:
    - Continue the study?
    - Use different protocols?
    - Collaborate with others?
- Write about the impact of working with a project mentor/scientist (*if applicable)*.